

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-23. (Canceled)

24. (New) A scheduling system, comprising:

a time slot that includes a plurality of positions, each of the positions providing an opportunity for a cell associated with a line to be transmitted;

a cell read sequence management table, which has a number of locations corresponding to the number of positions in the time slot, to schedule transmission of cells associated with lines at positions of the time slot;

a schedule management table to store information identifying locations within the cell read sequence management table for cells associated with new lines based on transmission rates of the new lines, the schedule management table identifying a different location within the cell read sequence management table for at least some of the transmission rates; and

a schedule computation section to schedule a cell associated with a new line for transmission by identifying a location in the cell read sequence management table for the cell associated with the new line based on the information in the schedule management table.

25. (New) The scheduling system of claim 24, wherein a PCR value corresponds to the transmission rate of the lines; and

wherein the schedule management table is configured to identify a location in the cell read sequence management table for a line by multiplying the PCR value of the line by an integer to obtain a multiplication result and adding one to the multiplication result.

26. (New) The scheduling system of claim 24, wherein when there is an idle area between locations to which lines have been associated in the cell read sequence management table, the schedule computation section is configured to move a line from a location in a rear part of the cell read sequence management table to the idle area.

27. (New) The scheduling system of claim 26, wherein the idle area is formed by deletion of a line from the cell read sequence management table.

28. (New) The scheduling system of claim 26, wherein the schedule computation section is configured to search the cell read sequence management table to determine whether there is a line in the rear part of the cell read sequence management table that that can fill the idle area, and move the line from the rear part to the idle area when there is a line in the rear part of the cell read sequence management table that that can fill the idle area.

29. (New) The scheduling system of claim 26, wherein the schedule computation section is configured to search the cell read sequence management table to identify a line, which is associated with a largest number of cells to transmit in the time slot, in the rear part of the cell read sequence management table that can fit in the idle area, and move the line from the rear part

to the idle area when there is a line in the rear part of the cell read sequence management table that that can fit in the idle area.

30. (New) The scheduling system of claim 26, wherein the schedule computation section is configured to update the schedule management table when the line is moved.

31. (New) The scheduling system of claim 24, wherein when there is a new line for which a location is needed in the cell read sequence management table and there is an idle area between locations to which lines have been associated in the cell read sequence management table, the schedule computation section is configured to determine whether the new line can fill the idle area, and associate the new line with the idle area when the new line can fill the idle area.

32. (New) The scheduling system of claim 31, wherein the schedule computation section is configured to update the schedule management table when the new line is associated with the idle area.

33. (New) The scheduling system of claim 24, wherein the schedule computation section is configured to determine whether the new line can be received based on whether there is a sufficient number of locations available in the cell read sequence management table.

34. (New) The scheduling system of claim 33, wherein the schedule computation section is configured to determine whether an idle area or an unused area exists in the cell read sequence management table for the new line.

35. (New) The scheduling system of claim 24, wherein the schedule computation section is configured to update the schedule management table when a location in the cell read sequence management table for the cell associated with the new line is identified.

36. (New) The scheduling system of claim 24, wherein the lines correspond to ATM lines.

37. (New) A scheduling method, comprising:

- providing a plurality of positions in a time slot, each of the positions providing an opportunity for a cell associated with a line to be transmitted;
- providing a number of locations corresponding to the number of positions in the time slot in a cell read sequence management table, the locations scheduling transmission of cells associated with lines at corresponding positions of the time slot;
- providing a schedule management table to store information identifying locations within the cell read sequence management table for cells associated with new lines based on transmission rates of the new lines, the schedule management table identifying a different location within the cell read sequence management table for at least some of the transmission rates; and
- identifying a location in the cell read sequence management table for a cell associated with a new line based on the information in the schedule management table.

38. (New) The scheduling method of claim 37, wherein a PCR value corresponds to the transmission rate of the lines; and

wherein the method comprises identifying a location in the cell read sequence management table for a line by multiplying the PCR value of the line by an integer to obtain a multiplication result and adding one to the multiplication result.

39. (New) The scheduling method of claim 37, wherein when there is an idle area between locations to which lines have been associated in the cell read sequence management table, the method comprises moving a line from a location in a rear part of the cell read sequence management table to the idle area.

40. (New) The scheduling method of claim 39, comprising deleting a line from the cell read sequence management table to form the idle area.

41. (New) The scheduling method of claim 39, comprising:
searching the cell read sequence management table to determine whether there is a line in the rear part of the cell read sequence management table that that can fill the idle area; and
moving the line from the rear part to the idle area when there is a line in the rear part of the cell read sequence management table that that can fill the idle area.

42. (New) The scheduling method of claim 39, comprising:
searching the cell read sequence management table to identify a line, which is associated with a largest number of cells to transmit in the time slot, in the rear part of the cell read sequence management table that can fit in the idle area; and

moving the line from the rear part to the idle area when there is a line in the rear part of the cell read sequence management table that that can fit in the idle area.

43. (New) The scheduling method of claim 39, comprising updating the schedule management table when the line is moved.

44. (New) The scheduling method of claim 37, wherein when there is a new line for which a location is needed in the cell read sequence management table and there is an idle area between locations to which lines have been associated in the cell read sequence management table, the method comprises:

determining whether the new line can fill the idle area; and

associating the new line with the idle area when the new line can fill the idle area.

45. (New) The scheduling method of claim 44, comprising updating the schedule management table when the new line is associated with the idle area.

46. (New) The scheduling method of claim 37, comprising determining whether the new line can be received based on whether there is a sufficient number of locations available in the cell read sequence management table.

47. (New) The scheduling method of claim 46, comprising determining whether an idle area or an unused area exists in the cell read sequence management table for the new line.

48. (New) The scheduling method of claim 37, comprising updating the schedule management table when a location in the cell read sequence management table for the cell associated with the new line is identified.

49. (New) The scheduling method of claim 37, wherein the lines correspond to ATM lines.

50. (New) An ATM device, comprising:

means for providing a time slot with a plurality of positions, each of the positions providing an opportunity for an ATM line to be transmitted;

means for providing a number of locations corresponding to the number of positions in the time slot in a cell read sequence management table, the locations scheduling transmission of ATM lines at corresponding positions of the time slot;

means for providing a schedule management table to store information identifying locations within the cell read sequence management table for new lines based on transmission rates of the new lines, the schedule management table identifying a different location within the cell read sequence management table for at least some of the transmission rates; and

means for scheduling a new line for transmission by identifying a location in the cell read sequence management table for the new line based on the information in the schedule management table.